



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/796,179	03/10/2004	Shinji Kobayashi	250235US3	3505
22850	7590	12/02/2008	EXAMINER	
OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314				EDWARDS, LAURA ESTELLE
ART UNIT		PAPER NUMBER		
1792				
NOTIFICATION DATE			DELIVERY MODE	
12/02/2008			ELECTRONIC	

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

patentdocket@oblon.com
oblonpat@oblon.com
jgardner@oblon.com

Office Action Summary	Application No.	Applicant(s)	
	10/796,179	KOBAYASHI ET AL.	
	Examiner	Art Unit	
	Laura Edwards	1792	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 15 August 2008.

2a) This action is **FINAL**. 2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 1-20 is/are pending in the application.

4a) Of the above claim(s) 17-20 is/are withdrawn from consideration.

5) Claim(s) _____ is/are allowed.

6) Claim(s) 1-6 and 9-16 is/are rejected.

7) Claim(s) 7 and 8 is/are objected to.

8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) All b) Some * c) None of:

1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. _____.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) Notice of References Cited (PTO-892)

2) Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____.

4) Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.

5) Notice of Informal Patent Application

6) Other: _____.

Election/Restrictions

This application contains claims 17-20 drawn to a non-elected invention. A complete reply to the final rejection must include cancellation of nonelected claims or other appropriate action.

Claim Rejections - 35 USC § 103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 1-6, 9, and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kitano et al (US 6,537,373) in view of Katsumi (JP 01-236967).

Kitano provides a liquid processing apparatus for forming a coating film on a shaped substrate comprising a spin chuck (61; see Fig. 12) including a support plate for substantially horizontally supporting the substrate thereon, the spin chuck rotating the substrate in a substantially horizontal plane; a cup (82) disposed around the substrate supported on the spin chuck; an exhaust unit or outlet (not numbered) at the bottom of the cup for evacuating an inside of the cup; and a supply nozzle (65) for supplying a coating/cleaning solution to a top surface of the substrate supported on the spin chuck. Kitano is silent concerning least one air flow control member on the support plate wherein the air flow control member is not provided near peripheral [corner] portions of the substrate supported on the spin chuck. However, it was known in the art, at the time the invention was made, to provide for a chuck with a support plate having at least one air control member defined by configured sidewalls of the chuck encompassing the substrate with corners of the substrate being free from obstruction in order to dispense liquid processing

material from corners of the chuck and thereby provide for more uniformity in coating of the polygonal substrate as evidenced by Katsumi (see abstract and all Figs.). In light of the teachings of Katsumi, one of ordinary skill in the art would readily appreciate using a chuck with a supporting plate without corner obstructions in the Kitano apparatus in order to process a polygonal substrate to result in a more uniform coating film thereon.

With respect to claim 2, the sidewalls of the air flow control member appear to be almost inline with the surface of the substrate but even so, to provide the top surface of the air flow control member to be level with the supported substrate would be within the level of ordinary skill in art to allow for more even distribution of the liquid when spreading on the rotating substrate.

With respect to claims 3-6, the apparatus as defined by the combination above is deemed to meet the claimed limitations as Katsumi provides a chuck with a supporting plate having sidewalls with cut-outs at the corners with the exterior of the control member being arcuate in shape.

With respect to claims 9 and 10, Katsumi provides for holes (18) in the support plate as evidenced by Fig. 2. Thus, the incorporation of holes to exhaust the backside of the processed wafer in the combination above is deemed to be within the purview of one skilled in the art.

Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kitano et al (US 6,537,373) in view of Katsumi (JP 01-236967) as applied to claim 1 above and further in view of Yoshihara et al (US 6,527,860), hereinafter referred to as Yoshihara.

The teachings of Kitano and Katsumi have been mentioned above but neither teach or suggest a movably controlled ring plate. However, it was known in the art, at the time the invention was made, to provide a movably controlled ring plate with respect to a supported substrate within a processing cup in order to facilitate the control of air flow during processing as evidenced by Yoshihara (see member 25). It would have been obvious to one of ordinary skill in the art to provide a movably controlled ring plate as taught by Yoshihara in the apparatus as defined by the combination above in order to further facilitate control of air flow during processing.

Claims 12-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kitano et al (US 6,537,373) in view of Katsumi (JP 01-236967) as applied to claim 1 above and further in view of Matsuda et al (US 6,494220), hereinafter referred to as Matsuda.

The teachings of Kitano and Katsumi have been mentioned above but neither teach or suggest an air flow regulation ring with an air opening surrounding the air flow control member with the air inlet communicating with the exhaust. However, it was known in the art, at the time the invention was made, to provide an air flow regulation ring (33) with an air opening surrounding the air flow control member with the air inlet communicating with the exhaust in order to control air flow about the periphery of the processed wafer as evidenced by Matsuda (see Fig. 5). In light of the teachings of Matsuda, it would have been obvious to one of ordinary skill in the art to provide the air flow regulation ring with air opening in communication with exhaust in the apparatus defined by the combination above in order to further facilitate control of air flow during processing of the substrate.

Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kitano et al (US 6,537,373) in view of Katsumi (JP 01-236967) and Matsuda et al (US 6,494220), as applied to claim 12 above and further in view of Yoshihara et al (US 6,527,860), hereinafter referred to as Yoshihara.

The teachings of Kitano, Katsumi, and Matsuda have been mentioned above but none teach or suggest a ring plate with a z-drive mechanism. However, it was known in the art, at the time the invention was made, to provide a movably controlled ring plate with a drive mechanism to move the plate relative to the supported substrate in order to facilitate the control of air flow during processing as evidenced by Yoshihara (see member 25). It would have been obvious to one of ordinary skill in the art to provide a movably controlled ring plate as taught by Yoshihara in the apparatus as defined by the combination above in order to further facilitate control of air flow during processing.

Allowable Subject Matter

Claims 7 and 8 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

Applicant's arguments with respect to the claims have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Laura Edwards whose telephone number is (571) 272-1227. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nadine Norton can be reached on (571) 272-1465. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Laura Edwards/
Primary Examiner
Art Unit 1792

Le
November 24, 2008